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Declaration under Rule 4.17:

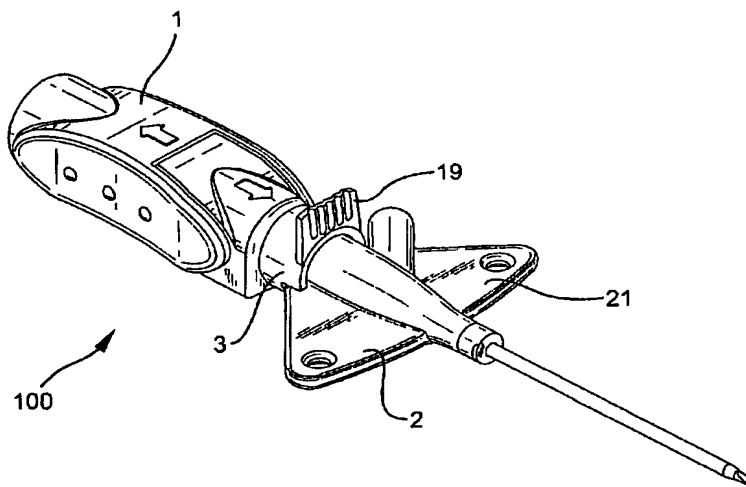
— of inventorship (Rule 4.17(iv)) for US only

Published:

— with international search report

[Continued on next page]

(54) Title: **IV CATHETER AND NEEDLE ASSEMBLY AND METHOD**



(57) Abstract: An IV catheter includes a catheter having a wall defining a lumen, a proximal end, and a distal end. An adapter has a proximal end, a distal end and an internal cavity. The adapter is in fluid communication with the catheter lumen. A septum is positioned within the adapter cavity at the adapter proximal end. An extension tube extends laterally from the adapter and is in fluid communication with adapter cavity. A tip shield has a distal end, a proximal end and an internal cavity. The tip shield is positioned adjacent adapter proximal end and coaxially aligned with adapter. A hub has a proximal portion, a distal portion and an internal cavity. The hub is positioned adjacent the tip shield proximal end and is aligned coaxially with the tip shield. A cannula has a wall defining a lumen, a beveled distal end, an aperture in the wall of said cannula near the cannula distal end and a proximal end in the shape of a hook. The cannula passes through and is coaxially aligned with the catheter, adapter, tip shield and hub.

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For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

INTERNATIONAL SEARCH REPORT

International Application No

PCT/US2004/008899

A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 A61M25/06 A61M5/34

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 A61M

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data, PAJ

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 99/24092 A (MDC INVEST HOLDINGS INC ; HALSETH THOR R (US); BOTICH MICHAEL J (US)) 20 May 1999 (1999-05-20) page 13, lines 15-18; figures 9,10 -----	1-5, 23-29
A	WO 02/096494 A (BECTON DICKINSON CO) 5 December 2002 (2002-12-05) abstract; figures -----	1,23,26
A	EP 1 110 575 A (ETHICON INC) 27 June 2001 (2001-06-27) abstract; figures -----	1,23
A	GB 570 060 A (SAMUEL JAMES EVERETT) 20 June 1945 (1945-06-20) page 3, lines 38-55; figures -----	26-29

☐ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

* Special categories of cited documents :

"A" document defining the general state of the art which is not considered to be of particular relevance
 "E" earlier document but published on or after the international filing date
 "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
 "O" document referring to an oral disclosure, use, exhibition or other means
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"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
 "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
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 "8" document member of the same patent family

Date of the actual completion of the international search

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INTERNATIONAL SEARCH REPORT

Information on patent family members

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Patent document cited in search report		Publication date	Patent family member(s)	Publication date
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INTERNATIONAL SEARCH REPORT

International application No.
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Box II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:
2. ☐ Claims Nos.:
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:
3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

see additional sheet

1. ☐ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☒ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

1-5, 23-29

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☐ No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 1-5,23-29

An IV catheter comprising a catheter, an adapter, a septum, an extension tube, a tip shield, a hub and a cannula having a hook shape in the proximal end. A method of making a cannula having a hook shape.

2. claims: 6-22

A method of making a needle assembly by using a glue for fixing the cannula to the hub.

3. claims: 30-35

A method of forming a medical needle by crimping the proximal end to create a fluid-tight seal at the proximal end.

4. claims: 36-50

An IV catheter comprising a catheter, an adapter, a tip shield, a hub and a cannula having a proximal end including a mechanical interlock within the internal cavity of the hub. A method of making a cannula having a mechanical interlock at the proximal end.
